



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of

Confirmation No.: 8862

BRACEWELL

Atty. Ref.: 540-522

Serial No. 10/507,002

Group: 2123

Filed: September 8, 2004

Examiner: R. Guill

For: A METHOD, TOOL AND SYSTEM FOR INCREASING THE
EFFICIENCY OF A DESIGN PROCESS

APPEAL BRIEF

On Appeal From Group Art Unit 2123

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TABLE OF CONTENTS

I. REAL PARTY IN INTEREST	1
II. RELATED APPEALS AND INTERFERENCES.....	2
III. STATUS OF CLAIMS	2
IV. STATUS OF AMENDMENTS.....	2
V. SUMMARY OF THE CLAIMED SUBJECT MATTER	3
VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL.....	6
VII. ARGUMENT	6
A. The Examiner’s contention that one of Conklin, Hirose and Regli teach the claimed limitation “said directed link is bi-directional to permit a user to traverse the link in either direction” is still incorrect.....	8
B. The Examiner fails to provide any rationale for combining bits and pieces of the three cited references and then combining them in the manner of Appellant’s independent claims	11
C. The Examiner does not cite any portion of the Kogan, Nguyen and Weinreich references, which he alleges contains “bi-directional hyperlinks,” as teaching the claimed “directed link” as defined in the claims	13
D. The Examiner fails to evidence any support for a <i>prima facie</i> case of obviousness	13
VIII. CONCLUSION.....	20
IX. CLAIMS APPENDIX	A1
X. EVIDENCE APPENDIX.....	A6
XI. RELATED PROCEEDINGS APPENDIX	A7



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October 20, 2009

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APPEAL BRIEF

Sir:

I. REAL PARTY IN INTEREST

The real party in interest in the above-identified appeal is BAE SYSTEMS plc and Rolls-Royce plc by virtue of an assignment of rights from the inventor to BAE SYSTEMS plc and Rolls-Royce plc recorded September 8, 2004 at Reel 16468, Frame 640.

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II. RELATED APPEALS AND INTERFERENCES

There are believed to be no related appeals, interferences or judicial proceedings with respect to the present application, other than the Pre-Appeal Brief Request for Review filed May 27, 2008 in which the Decision of the Panel on July 8, 2008 was to re-open prosecution and the subsequent Pre-Appeal Brief Request for Review filed May 20, 2009.

III. STATUS OF CLAIMS

Claims 1, 2, 4-6, 8, 10, 15, 17-19, 22, 33, 41, 47, 48 and 50 stand rejected in the outstanding Official Action under 35 USC §103 over the cited prior art. Claims 3, 7, 9, 11-14, 16, 20, 21, 23-32, 34-40, 42-46, 49 & 51 have been cancelled without prejudice. The above rejection of claims 1, 2, 4-6, 8, 10, 15, 17-19, 22, 33, 41, 47, 48 and 50 is appealed.

IV. STATUS OF AMENDMENTS

No further response has been submitted with respect to the Final Official Action in this application other than the filing of a second Pre-Appeal Brief Request for Review which decision was mailed on June 1, 2009.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellant's specification and figures provide an explanation of the claimed invention set out in independent claims 1 and 33, with each claimed structure addressed as to its location in the specification and in the figures.

“1. A design knowledge information capture tool [one embodiment is shown in Figure 5 and discussed on page 30, lines 3-25 and elsewhere in the specification] comprising:

a storage means [database 620 and file server 615 as shown in Figure 5 and discussed on page 30, lines 8-15 and elsewhere in the specification] for storing design knowledge information generated or acquired during progress of a first design project, wherein the design knowledge information extends beyond product design information and includes information on evolution of a first design project and causal dependencies between items of said design knowledge, said storage means comprising a plurality of files [such as “DRed Debonding Diagrams” shown in Figure 3a and described on page 17, line 4 through page 21, line 20 and elsewhere in the specification], each file having a predefined knowledge structure for including a list of issues to be addressed [e.g., see issue file shown in Figure 3a and discussed on page 17, lines 4-17 and elsewhere in the specification];

an input means [input/output means 500 as shown in Figure 5 and discussed on page 30, lines 8-15 and elsewhere in the specification] for allowing a user to input information into the storage means; and

a presentation means [input/output means 500 as shown in Figure 5 and discussed on page 30, lines 8-15 and elsewhere in the specification] for presenting a file template of each of said plurality of files [see completed file template in figure 3a and discussed on page 17, lines 4-10 and elsewhere in the specification] to the user to allow the information to be input by the user in said predefined knowledge structure, wherein said presentation means presents each said structure as an array of nodes [nodes 31a-e (note: node 32b should be labeled as node 31b) as shown in Figure 3a and discussed on page 30, lines 8-15 and elsewhere in the specification], each node representing an item of said design knowledge, wherein a dependency between items of said design knowledge is represented by a directed link between selected nodes [directed link 43a as shown in Figure 3b and discussed on page 22, lines 8-16 and elsewhere in the specification], wherein said directed link is bi-directional to permit a user to traverse the link in either direction [discussion of tunneling links on page 22, lines 5-25 and elsewhere in the specification], and wherein said selected nodes represent items of design knowledge stored in different files.”

“33. A method for capturing design knowledge information [wherein one embodiment is shown in Figure 5 and discussed on page 30, lines 3-25 and elsewhere in the specification] wherein the information extends beyond product design information and includes information on evolution of a first design project and causal dependencies between items of design knowledge, comprising the steps of:

storing the information generated or acquired during progress of a first design project in a storage means [database 620 and file server 615 as shown in Figure 5 and discussed on page 30, lines 8-15 and elsewhere in the specification], said storage means comprising a plurality of files [such as “DRed Debonding Diagrams” shown in Figure 3a and described on page 17, line 4 through page 21, line 20 and elsewhere in the specification], each file having a predefined knowledge structure, for including a list of issues to be addressed [e.g., see issue file shown in Figure 3a and discussed on page 17, lines 4-17 and elsewhere in the specification];

selecting one of said files and presenting a file template of each of said plurality of files to the user [input/output means 500 as shown in Figure 5 and discussed on page 30, lines 8-15 and elsewhere in the specification] to allow the information to be input by the user in said predefined knowledge structure, each structure being presented as an array of nodes [nodes 31a-31e (note: node 32b should have been labeled as node 31b) as shown n figure 3a and discussed on page

30, lines 8-15 and elsewhere in the specification], each node representing an item of said design knowledge, wherein a dependency between items of said design knowledge is represented by a directed link between selected nodes [directed link 43a as shown in Figure 3b and discussed on page 22, lines 8-16 and elsewhere in the specification], wherein said directed link is a bi-directional link to permit a user to traverse the link in either direction [discussion of tunneling links on page 22, lines 16-25 and elsewhere in the specification], and wherein said selected nodes represent items of design knowledge stored in different files, and inputting information into said one of said files.”

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The only ground of rejection remaining in this application is the rejection of claims 1, 2, 4-6, 8, 10, 15, 17-19, 22, 33, 41, 47, 48 and 50 under 35 USC §103(a) as being unpatentable over Conklin (“gIBIS: A Hypertext Tool for Exploratory Policy Discussion” provided by Appellant’s IDS) in view of Hirose (U.S. Patent 5,784,286) in view of Regli (“A Survey of Design Rationale Systems: Approaches, Representation, Capture and Retrieval”).

VII. ARGUMENT

Appellant’s arguments include the fact that the burden is on the Examiner to first and foremost properly construe the language of the claims to determine

what structure and/or method steps are covered by that claim. After proper construction of the claim language, the burden is also on the Examiner to demonstrate where a plurality of references teaches each of the structures and/or method steps recited in independent claims 1 and 33.

Furthermore, the Court of Appeals for the Federal Circuit has stated in the case of *In re Rouffet*, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998)

to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court **requires** the examiner to show a **motivation** to combine the references that create the case of obviousness. In other words, the Examiner **must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. (Emphasis added).

In its recent decision, the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (April 2007), held that it is often necessary for a court to look to interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace and the background knowledge possessed by a person of ordinary skill in the art in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. The Supreme Court held that “[t]o facilitate review, **this analysis should be made explicit.**” (emphasis added) *Id.* at 1396.

The Supreme Court in its *KSR* decision went on to say that it followed the Court of Appeals for the Federal Circuit's advice that "**rejections on obviousness grounds cannot be sustained by mere conclusory statements**"; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" ((emphasis added) the Supreme Court quoting from the Court of Appeals for the Federal Circuit in *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006)).

A. The Examiner's contention that one of Conklin, Hirose and Regli teaches the claim limitation "said directed link is bi-directional to permit a user to traverse the link in either direction" is still incorrect

The Court of Appeals for the Federal Circuit has consistently held that "the PTO has the burden under Section 103 to establish a *prima facie* case of obviousness." *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). "It can satisfy this burden only by **showing some objective teaching in the prior art** or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." (emphasis added). *Id.* None of the references contain any objective teaching of the claimed bi-directional "directed link."

In the Final Rejection, the Examiner admits that Conklin does not teach the claimed "directed link is bi-directional to permit a user to traverse the link in either direction" (page 13, paragraph bridging pages 12-13). The Examiner doesn't

indicate that this structure is disclosed anywhere in Hirose or Regli. As a consequence, none of the three cited references teach this feature of the independent claims.

The best the Examiner can do is suggest that this positively recited claim limitation is somehow “well known at the time of the invention” in section “t” on page 13. The Examiner’s continued reliance upon Official Notice is again traversed under MPEP §2144.03. The Examiner now cites only three references (Kogan, Nguyen, & Weinreich, having dropped Hyman) which purportedly teach the claimed “directed link.” As will be seen, none of these teach the claimed bi-directional link.

With respect to the Kogan reference, the Examiner merely alleges that this teaches “bi-directional hyperlinks.” However, if the Kogan patent is reviewed, while it discloses bi-directional links that have multiple endpoints, it is unclear as to how such a system could be incorporated into the framework of a “design knowledge information capture tool” as required in independent claim 1 or the method of claim 33.

The Kogan reference is alleged to teach “bi-directional hyperlinks” at column 4, lines 35-55 and between column 1, line 65 and column 2, line 2. The Examiner’s interpretation that Kogan has anything to do with Applicant’s claimed “directed link between selected nodes” is respectfully traversed. The reference, at column 4 of Kogan, merely discusses hyperlinks as being “bi-directional,”

meaning it can be traversed in either direction. While such systems of course are well known, it is completely unknown to apply this aspect to a “design knowledge information capture tool” and there is nothing in Kogan which suggests how the general feature of the claimed “directed link” could be applied, especially to selected nodes representing items of design knowledge stored in different files.

The Examiner’s reference to the Nguyen patent purportedly teaches “bi-directional hyperlinks” although there is nothing in Nguyen which suggests the bi-directionality. It merely teaches links from a source to an anchor which, while it may be considered a “hyperlink,” it does not suggest or teach that it is “bi-directional.” It is certainly not bi-directional in the sense of the present invention with respect to the linking of nodes relating to “items of design knowledge stored in different files.”

Weinreich, at least in the cited portion on page 22, discloses bi-directional linking, but specifically teaches away from its use in graphical maps (see the last three lines of the section entitled “Bi-directional links”). Thus, Weinreich would clearly teach away from the application of the claimed “directed link” between selected nodes where the nodes “represent items of design knowledge stored in different files.”

As noted above in the *In re Fine* decision above, the burden is on the Examiner to establish where **each** claimed structure is disclosed in a combination of prior art references and, thus far, the Examiner has failed to meet this burden.

Absent a disclosure of the claimed “directed link between selected nodes” and wherein the selected nodes represent “items of design knowledge stored in different files” somewhere in the patchwork quilt of prior art references, the rejection of the independent claims and claims dependent thereon clearly fails for lack of evidence amounting a *prima facie* case of obviousness.

B. The Examiner fails to provide any rationale for combining bits and pieces of the three cited references and then combining them in the manner of Appellant’s independent claims

On pages 8-9, the Examiner alleges general benefits of each of the prior art references as a motivation for combining portions of references, but there is no recognition that they can be combined in the manner of the pending claims or that they would provide the benefit disclosed in the pending application.

As noted in the above quote from *KSR*, the burden on the Examiner, in order “[t]o facilitate review [of the reasons for combining prior art], this analysis should be made explicit.” *Id.* at 1396. The Examiner provides no analysis and therefore fails to meet the *KSR* requirements of a *prima facie* case of obviousness.

In section 5(r)(ii) on page 7, the recitation of benefits of the Hirose reference “cost effective, useful and inexpensive design process recorder” is alleged to be the “motivation” as to why one would combine Hirose with Conklin. However, these benefits have nothing to do with the elements being chosen from Hirose and suggested to be combined with other specific elements of Conklin.

There is no indication as to why one of ordinary skill in the art would ignore the contrary teachings in the Hirose and Conklin references. As a result, the Examiner's statement in section r(ii) is merely a conclusory statement reciting generic benefits of virtually any invention, i.e., "cost effective," "useful" and "inexpensive."

In section 5(t)(ii) on page 8, the Examiner again makes a broad sweeping conclusory statement that "to use the art of Regli with the art of Conklin" which presumably includes anything disclosed in Regli and anything disclosed in Conklin, would "provide a great aid to designers" and therefore this is the purported motivation for combining elements. Again, the Examiner simply fails to provide any reason to pick and choose the "directed link" (which he does not even allege is disclosed in Regli) with the other elements of the Conklin reference and the Hirose reference, and then combine them in the manner claimed.

It is Appellant's view that the Examiner has simply utilized hindsight reasoning in picking and choosing elements from Conklin, Hirose, Regli and the purported Official Notice references. He then, without any reason or rationale, alleges that it would be obvious to combine the elements in a manner which is taught only by Applicant's independent claims to provide a benefit which is only taught in the present application. This is not the current standard of obviousness and the Examiner has failed to meet the test set out in *KSR*.

C. The Examiner does not cite any portion of the Kogan, Nguyen and Weinreich references, which he alleges contains “bi-directional hyperlinks,” as teaching the claimed “directed link” as defined in the claims

It is the structure recited in Appellant’s claims which must be disclosed in at least one prior art reference in a combination rejection under §103. The Examiner has not indicated how or where Kogan, Nguyen or Weinreich teach Appellant’s claimed “directed link” instead of the Examiner’s hyperlink.

If the Examiner cannot point to where or how a prior art reference teaches a “directed link between selected nodes” which is “bi-directional to permit a user to traverse the link in either direction” and “wherein said selected nodes represent items of design knowledge stored in different files” there is simply no evidentiary disclosure of that claimed element.

D. The Examiner fails to evidence any support for a *prima facie* case of obviousness

In section 7, page 11 of the Final Rejection, the Examiner rejects claims 1, 2, 4-6, 8, 10, 15, 17-19, 22, 33, 41, 47, 48 and 50 under 35 USC §103 as being unpatentable over Conklin in view of Hirose further in view of Regli.

The Court of Appeals for the Federal Circuit, as noted above, has continually applied a two-prong test to establish a *prima facie* case of obviousness. First, the burden is on the Examiner to demonstrate how and where all claimed elements are disclosed somewhere in the combination of references. Secondly, even if the

Examiner meets this first test, it is then incumbent upon the Examiner, as confirmed by the United States Supreme Court in the *KSR* case noted above, to provide some explicit analysis as to why elements should be taken from the plurality of references and then combined in a manner disclosed only in Appellant's independent claims.

Finally, even if the Examiner met the requirements of establishing a *prima facie* case of obviousness by meeting the above two requirements, that *prima facie* case is completely rebutted if Appellant can establish that one or more of the cited references (in the combination of references) would lead one of ordinary skill in the art away from the claimed combination of elements.

As will be seen, the Examiner not only fails in both respects with respect to establishing a *prima facie* case of obviousness, but apparently ignores the contrary teaching of references in the combination.

1. The Examiner fails to meet his evidentiary burden of establishing that the prior art teaches all claimed elements

As discussed above in section A (herein incorporated by reference), the Examiner admits that the Conklin reference fails to teach the claimed bi-directional "directed link" (paragraph bridging pages 13 of the Final Rejection).

In response to Appellant's previously pointing out that the Examiner may not take "Official Notice" that claimed structure is obvious to one of ordinary skill in the art, the Examiner now cites the Kogan, Nguyen and Weinreich references as each teaching the purported bi-directional "directed link." As discussed above in

detail in section A, none of the newly cited references disclose a bi-directional link which could be incorporated into a “design knowledge information capture tool” as recited in Appellant’s independent claims.

Because Kogan, Nguyen and Weinreich do not support the Examiner’s contention that “bi-directional” directed links are well known in the art, the Examiner still fails to meet his obligation of showing that all claimed elements (the claimed presentation means in independent claim 1 and the claimed selecting and presenting step of claim 33) are somewhere disclosed in the cited prior art.

Because all claimed elements and method steps are not identified in the prior art combination of references, there is no support for a *prima facie* case of obviousness and therefore the Examiner’s general rejection of all pending claims under 35 USC §103 remains unsupported. Again, should the Examiner contend that all claimed elements and method steps are disclosed in the prior art combination, he is respectfully requested to identify exactly where the prior art reference teaches each of the claimed elements and their claimed interrelationship. Absent such specific identification of prior art teachings, it is submitted that the Examiner has not met his burden of establishing a *prima facie* case of obviousness and any further rejection thereunder is respectfully traversed.

2. The Examiner fails to identify any evidence or provide any explicit “analysis” as to why one of ordinary skill in the art would pick and choose elements or method steps from the prior art references and then combine them in the manner of Appellant’s claims

The above comments in sub-heading C are herein incorporated by reference. While the Examiner cites portions of the *KSR* case noted above out of context, he apparently draws the conclusion that, because known elements are used and that those known elements are used in their known configuration, any combination of those known elements must somehow be obvious. Of course if this were the case, only unknown elements could be used to provide patentable subject matter.

This is clearly not the decision of the Court of Appeals for the Federal Circuit or the U.S. Supreme Court in the above-noted decisions. The fallacy of the Examiner’s reading of the *KSR* case is clearly evident by considering the fact that in the late 1940’s NP and PN semiconductor diodes were well known, as was their operation. However, when two of such diodes were combined to form an NPN (or a PNP) transistor, while they continued to work in their known manner, the combination was patentable to Shockley and Bell Labs, and the success of the transistor leading to the computer revolution over the last 50 years has been clearly documented.

Yet, applying the Examiner’s interpretation of the *KSR* decision, because the two diodes were well known as was their operation at the time the transistor

was invented, claims to the transistor should have been rejected by the Patent Office. Even though the elements were clearly known and their individual operation was clearly known, they were combined in a new manner and were clearly patentable. That the individual components of an invention are known is simply not the test of obviousness, and this is clearly stated in the *KSR* case noted above.

The Examiner is not only charged with identifying structures in the prior art, but also with providing an “analysis” as to why one of ordinary skill in the art would have combined the claimed elements in the manner set out in the claims. In the present case, the Examiner on page 14, sub-sections u, v and w, merely provides his speculations as to benefits possibly motivating combination of references. However, this is not the test set out by the Supreme Court in the *KSR* case.

As noted above, the Examiner must provide more than merely conclusory statements as to nebulous benefits being achieved by combination of prior art references. For example, the Examiner states that the motivation to combine Hirose and Conklin would have been benefits disclosed in the Hirose reference, i.e., “a cost effective, useful and inexpensive design process recorder.” However, these are mere conclusory statements on the Examiner’s part, that Hirose is “cost effective, useful and inexpensive design process recorder.” There is no required “analysis” by the Examiner that there is some benefit in picking and choosing

elements from Hirose, from Conklin and from Regli and for combining those individual elements in the manner of Applicants' independent claims 1 or 33.

It is insufficient for the Examiner to merely generally allege that the prior art combination is a "cost effective, useful and expensive design process recorder" or is a "great aid to designers, and provides a basis for designers to explore more design options" or that it would be "obvious to the ordinary artisan at the time of invention to use the art of Hirose and the art of Regli and Official Notice with the art of Conklin to produce the claimed invention" (Final Rejection, page 14).

As a result of the above, while the Examiner announces the benefits of "motherhood and apple pie," he does not meet the test of the Supreme Court's requirement for an explicit "analysis" as to the reasons for picking and choosing elements from the cited prior art references and then for combining them specifically in the manner of Appellant's claims. Thus, the Examiner has failed to meet the second prong of the *prima facie* case of obviousness test and any further rejection thereunder is respectfully traversed.

3. The Examiner apparently fails to appreciate that Weinreich specifically teaches away from the cited prior art combination

As noted in section A above, the Weinreich reference on page 22 specifically teaches away from the use of a bi-directional link in graphical maps in the last three lines of the section entitled "Bi-directional Links." A detailed review of the Weinreich reference at page 22 under the heading "Bi-directional Links"

will indicate that such a system “poses a serious problem.” Weinreich discloses various approaches, but notes that they both have “their limitations if the number of links is high.”

Specifically, Weinreich indicates that graphical maps use a lot of screen space if dozens of nodes and links are displayed, thereby teaching away from Appellant’s claimed “presentation means for presenting a file template of each of said plurality of files to the user to allow the information to be input by the user in said predetermined knowledge structure.”

Appellant’s claim goes on to indicate that dependency between items of design knowledge is represented by “a directed link between selected nodes” and further that the directed link is “bi-directional to permit a user to traverse the link in either direction.” This organization of elements recited in Appellant’s independent claims 1 and 33 is not disclosed in Weinreich and, in fact, Weinreich teaches that there are “limitations” for a high number of links and suggests that “graphical maps” should not be used. The absence of graphical maps clearly precludes Appellant’s claimed invention and therefore Weinreich would tend to at least lead those of ordinary skill in the art away from the claimed combination of elements.

In accordance with the above, even if the Examiner had demonstrated that each claimed element and method step is disclosed in at least one of the references combined in the rejection, and if the Examiner had provided some reasonable

analysis suggesting a rationale for combining elements and/or method steps in the claimed manner, and thus had set out a *prima facie* case of obviousness, the evidence that Weinreich teaches away from the combination rebuts any *prima facie* case of obviousness.

Accordingly, even if the Examiner met his burden to establish a *prima facie* case of obviousness, it has been clearly rebutted by the contrary teachings in the Weinreich reference and therefore any further rejection of claims 1, 2, 4-6, 8, 10, 15, 17-19, 22, 33, 41, 47, 48 and 50 thereunder is respectfully traversed.

VIII. CONCLUSION

In the Final Rejection the Examiner continues to refuse to identify where any reference teaches the claimed “directional link.” Instead, the Examiner alleges only that the prior art references “appear” to teach claimed features, but “**appears to teach**” is not the standard of obviousness – the burden on the Examiner is to identify evidence that the cited references actually teach the claimed elements. Here the Examiner fails to meet that burden. Additionally, the Examiner’s failure to provide any explicit “analysis” as required by the *KSR* court is fatal to the purported *prima facie* case of obviousness. Finally, even if a *prima facie* case is made out (and this contention is strongly traversed), the contrary teachings of Weinreich legally and completely rebut the *prima facie* case.

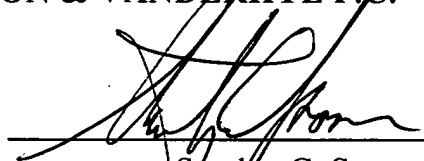
BRACEWELL
Serial No. 10/507,002

As a result of the above, there is simply no support for the rejection of Appellant's independent claims or claims dependent thereon under 35 USC §103. Thus, and in view of the above, the rejection of claims 1, 2, 4-6, 8, 10, 15, 17-19, 22, 33, 41, 47, 48 and 50 under 35 USC §103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____


Stanley C. Spooner
Reg. No. 27,393

SCS:kmm
Enclosure

IX. CLAIMS APPENDIX

1. A design knowledge information capture tool comprising:

a storage means for storing design knowledge information generated or acquired during progress of a first design project, wherein the design knowledge information extends beyond product design information and includes information on evolution of a first design project and causal dependencies between items of said design knowledge, said storage means comprising a plurality of files, each file having a predefined knowledge structure for including a list of issues to be addressed;

an input means for allowing a user to input information into the storage means; and

a presentation means for presenting a file template of each of said plurality of files to the user to allow the information to be input by the user in said predefined knowledge structure, wherein said presentation means presents each said structure as an array of nodes, each node representing an item of said design knowledge, wherein a dependency between items of said design knowledge is represented by a directed link between selected nodes, wherein said directed link is bi-directional to permit a user to traverse the link in either direction, and wherein said selected nodes represent items of design knowledge stored in different files.

2. A tool according to claim 1 wherein the storage means comprises an interactive graph editor.

4. A tool as claimed in claim 1 wherein, in use, a user is prompted by the knowledge structure, to input at least one possible answer to at least one of said issues, the at least one possible answer being stored as one of the, or each, piece of information at the label of the node.

5. A tool as claimed in claim 4 wherein the knowledge structure prompts the user to input at least one argument that supports or refutes the possible answer, the at least one argument being stored as one of the, or each, piece of information at the label of the node.

6. A tool as claimed in claim 5 wherein the at least one argument is classified as a supporting or a refuting argument.

8. A tool as claimed in claim 5 wherein said at least one argument is classified as a valid or an invalid argument.

10. A tool as claimed in claim 4 wherein the at least one answer is classified as an open, an accepted or rejected answer.

15. A tool as claimed in claim 1 wherein each node appears once only in the plurality of files.

17. A tool as claimed in claim 1 wherein the, or each, node can be linked to an additional node on the same file.

18. A tool as claimed in claim 1, wherein a sub-issue to at least one predefined issue can be identified and input into the storage means.

19. A tool as claimed in claim 18 wherein a user is prompted to input at least one possible answer to the sub-issue.

22. A tool according to claim 1, having a processing means to identify at least one predefined issue addressed on a first design project, which issue is encountered on a subsequent design project.

33. A method for capturing design knowledge information wherein the information extends beyond product design information and includes information on evolution of a first design project and causal dependencies between items of design knowledge, comprising the steps of:

storing the information generated or acquired during progress of a first design project in a storage means, said storage means comprising a plurality of files, each file having a predefined knowledge structure, for including a list of issues to be addressed;

selecting one of said files and presenting a file template of each of said plurality of files to the user to allow the information to be input by the user in said predefined knowledge structure, each structure being presented as an array of nodes, each node representing an item of said design knowledge, wherein a dependency between items of said design knowledge is represented by a directed link between selected nodes, wherein said directed link is a bi-directional link to permit a user to traverse the link in either direction, and wherein said selected nodes represent items of design knowledge stored in different files, and inputting information into said one of said files.

41. A computer programmed to capture design knowledge information, wherein the design knowledge information is generated or acquired during progress of a first design project, the information extending beyond product design information and including information on evolution of the first design project and causal dependencies, according to the method described in claim 33.

47. A computer readable storage medium on which is stored computer executable instructions which when executed by a computer processor performs the method of claim 41.

48. A computer system including a computer readable storage medium, said computer configured to capture and reuse a design rationale of a first project, the design rationale containing data on at least one design issue according to the method of claim 33.

50. A computer system including a computer readable storage medium, said computer configured to capture design knowledge information, the design knowledge information being generated or acquired during progress of a first design project wherein stored information extends beyond project design information and includes information on evolution of the first design project and causal dependencies, according to the method of claim 33.

BRACEWELL
Serial No. 10/507,002

X. EVIDENCE APPENDIX

None.

BRACEWELL
Serial No. 10/507,002

XI. RELATED PROCEEDINGS APPENDIX

None.